SYSTEM AND METHOD FOR IMPROVING PERFORMANCE OF AN ADAPTIVE ANTENNA ARRAY IN A VEHICULAR ENVIRONMENT

ABSTRACT OF THE DISCLOSURE

A system and method is disclosed for improving downlink performance of an adaptive antenna array in a vehicular environment. The system comprises a mobile station that has a first mobile antenna and a second mobile antenna. A spatial signature estimator associated with a base transceiver station obtains spatial signatures from signals from the first mobile antenna and from the second mobile antenna within an uplink interval. Correlation circuitry uses the spatial signatures to identify a least changing spatial signature to obtain an optimal downlink beamforming weight vector to be used in the transmission of a signal to the mobile station in the next downlink interval.